W. P. WOOD.

Automatic Wagon-Brake.

No. 206,063. Patented July 16, 1878.

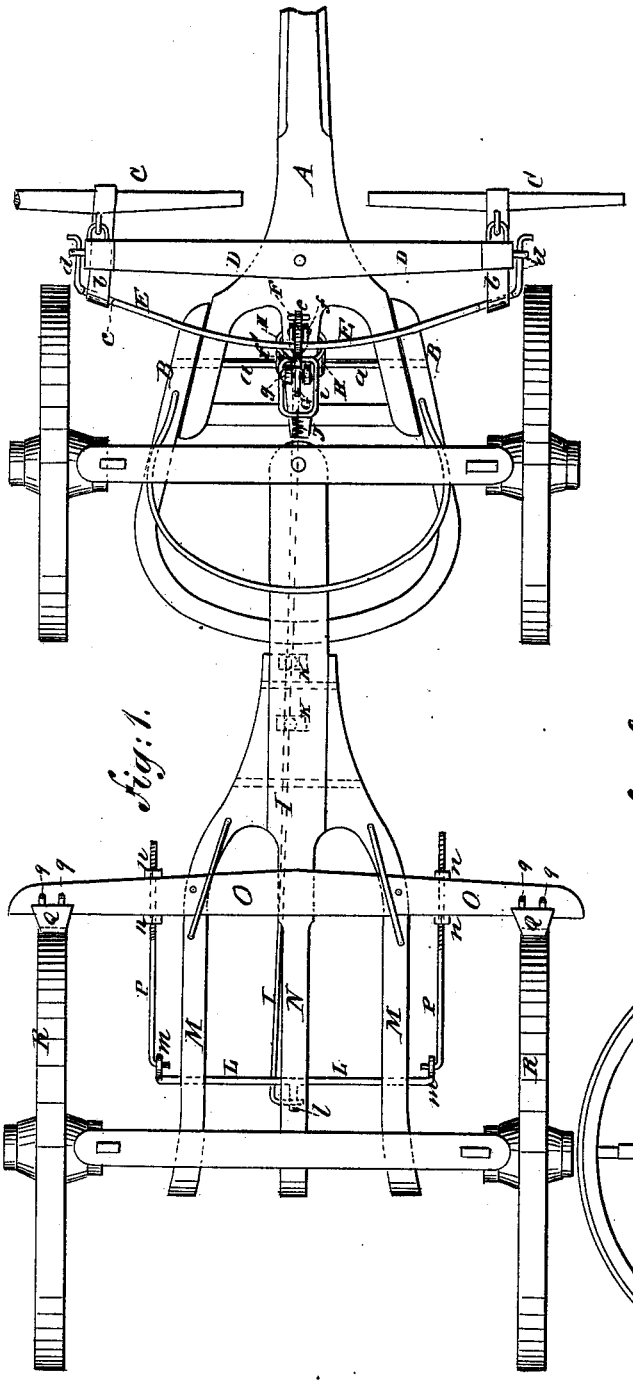

Fig: 1.

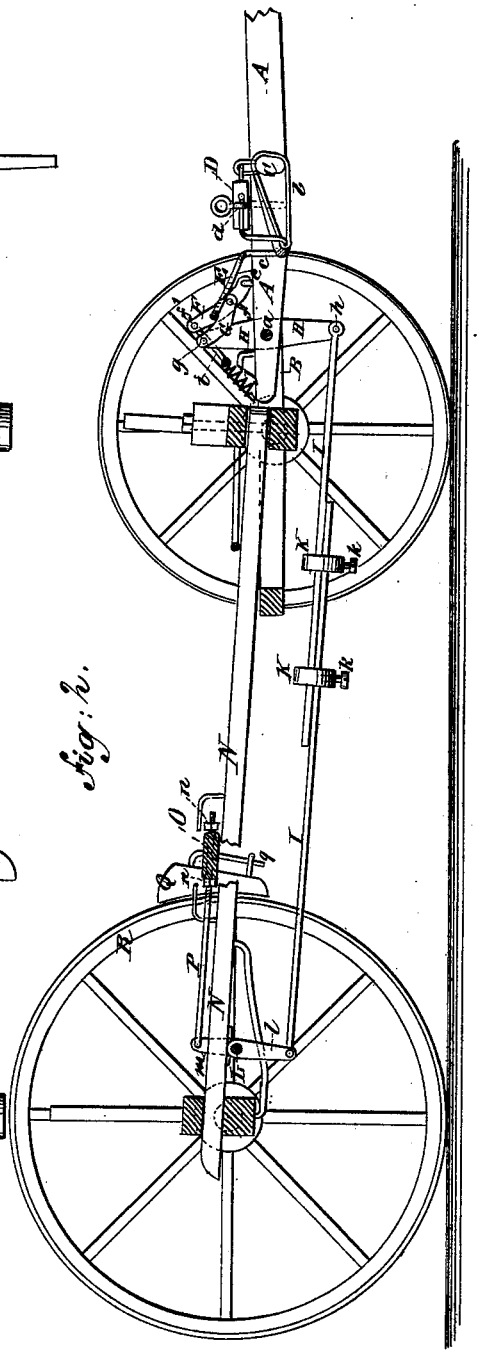

Fig: 2.

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# UNITED STATES PATENT OFFICE.

WADE P. WOOD, OF LEON, IOWA.

## IMPROVEMENT IN AUTOMATIC WAGON-BRAKES.

Specification forming part of Letters Patent No. **206,063**, dated July 16, 1878; application filed May 21, 1878.

*To all whom it may concern:*

Be it known that I, WADE P. WOOD, of Leon, in the county of Decatur and State of Iowa, have invented a new and Improved Wagon-Brake, of which the following is a specification:

The object of my improvement is to provide an automatic brake for wagons and other vehicles so constructed that a rise of the forward end of the tongue, such as occurs in going downhill, will apply the brake to the wheels; a forward pull of the team will move the brake away from the wheels; when not pulling, the brake will resume its normal position; and a backward movement of the wheels (as in backing out) will cause the brake-blocks to rise and be released from the wheels.

The invention consists in the construction and combination of the various parts for their several purposes, as will be hereinafter described and claimed.

In the accompanying drawing, Figure 1 represents a top view of a wagon provided with my automatic brake. Fig. 2 is a longitudinal vertical section of the same.

Similar letters of reference indicate corresponding parts.

A is the tongue, pivoted with its rear end, by the rod *a*, between the forward hounds B of the wagon, and which serves as the main lever to operate the brake when oscillated upon the rod *a* as its fulcrum. C are the single-trees, suspended at the ends of the the double-tree D, to the forward side thereof, in the usual manner, and each provided at the point of suspension with a surrounding strap, *b*, connecting it underneath the end of the double-tree to a downward U-shaped bend, *c*, of the bail E, the extreme ends of which latter are bent forward and fitted to slide in staples *d* or other guides on the ends of the double-tree D. The center of the bail E is curved back and goes through a hole in the upright lever F, which is pivoted with its lower end at *e* on the tongue A, in the center line thereof. Between the point *e* and the bail E is pivoted, at *f*, to the lever F, the lower forward end of the link G, whose upper rearward end is pivoted at *g* to the upper end of the upright lever H, which latter is fulcrumed at its middle upon the rod *a*, in the middle line of the tongue A, and pivoted with its lower end at *h* to the rear end of the brake-rod I. The lever F and connecting-link G together constitute the lock-lever of the brake, because, when the pivoting-point *f* is in line with the points *e* and *g*, or a little in rear of the said line, the pressure of the wheels against the brake cannot move the upper end of the lever H forward, but the brake is locked under the pressure of a rigid lever formed of the tongue A and the lower half of the lever H, and acting over the fulcrum *a*; but when the pull of the horses raises the single-trees, and, by means of the straps *b*, draws the bail E forward, the lever F is pulled with the bail, unlocking the lever H, and pulling it forward by the connecting-link G, thereby drawing the brake-blocks away from the wheels.

To cause the lever F and link G to resume their normal or locked position when the horses are not pulling, the lever F is extended above the bail E, and connected at *f'*, by a link, *i*, to a spiral or other spring, J, secured to the rear end of or underneath the tongue, and acting by its contraction to pull the lever F rearward.

The brake-rod I is made in two pieces, lapping each other, and clamped together by collars K and set-screws *k*, so that the length of the rod may be varied for the adjustment of the brake. The rear end of the rod I is pivoted to the downward-projecting central arm *l* of the rock-shaft L, which latter is mounted in bearings on the under side of the rear hounds M and the reach N, and is provided at each end, outside of the rear hounds M, with an upward-projecting arm, *m*, to which is pivoted the rear end of an iron rod, P, whose forward end is threaded for a distance, and inserted through a hole in the brake-bar O, which latter is fastened on the rod P by nuts *n*, (on the threaded part of the rod P,) tightening against the bar O, one on each front and rear side thereof. By the nuts *n* the brake-bar O can be adjusted on the rod P suitably to take up the wear of the brake-blocks, and again fastened in position. The brake-blocks Q are thicker at their upper than at their lower ends, and their front or friction surface is made to conform in shape to the circumference of the hind wheels R, while their back is vertical and provided with vertical parallel bars *q*, fitted to slide in holes in the brake-bar O, so that the brake-blocks (being arranged to act on the

hind wheels R, above their horizontal diameter) can be slid up and down in the brake-bar, and, when raised, will be out of pressing contact with the wheels.

When the front end of the tongue A is raised, (as is the case in going downhill, when the wagon is apt to move forward swifter than the horses,) the tongue-lever H, kept in position by the lock-lever F G, acts, by means of the rod I, armed rock-shaft L, and rods P, to apply the brake on the wheels R and retard their turning. Should it, however, be required to back out, the rise of the tongue A does not interfere with this movement by applying the brake, as the backward movement of the wagon and hind wheels causes the brake-blocks Q to rise in the brake-bar and ride easy on the wheels, without pressure enough to retard the movement of the latter.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The lock-lever F G, combined with bail and straps attached to single-trees to pull the brake from the wheels.

2. The lever F, extended above bail E, and connected at *f'*, by a link, *i*, to a spiral spring, J, as and for the purpose set forth.

3. The straps *b*, in combination with the single-trees C, and with the bail E, sliding in guides *d* on the end of the double-tree D, to slide the bail E by the pull of the horses, substantially as and for the purpose set forth.

WADE P. WOOD.

Witnesses:
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